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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,066	02/06/2004	Roger Lam	FIS920030398US1	2065
29371	7590	02/16/2006		
CANTOR COLBURN LLP - IBM FISHKILL 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			EXAMINER CHERVINSKY, BORIS LEO	
			ART UNIT	PAPER NUMBER
			2835	

DATE MAILED: 02/16/2006

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**MAILED**  
FEB 16 2006  
**GROUP 2800**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/708,066  
Filing Date: February 06, 2004  
Appellant(s): LAM ET AL.

Sean F. Sullivan, Reg. No. 38,328  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 12/22/05 appealing from the Office action mailed 08/03/05

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 1, 4, 6, 8, 11, 14, 17 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Toy et al.

Toy discloses a semiconductor device packaging assembly, comprising: a chip module 10 mounted on a circuit board substrate 30; at least one integrated circuit chip 16 mounted on the substrate 10; a thermal interface layer 17 in contact with the at least one integrated circuit chip 16; a heat sink 20 in contact with the thermal interface layer 17 and at least one spacer member 47 in contact between said chip module 10 and the heat sink, wherein the at least one spacer member 47 is provided with an adhesive material 53, 53 on top and bottom surfaces thereof; the at least one spacer member 47 comprises a rigid material; the thermal interface layer 17 is the thermal interface pad and free of adhesive. The method steps of claims 8, 11 are necessitated by the device structure as disclosed by Toy et al.

2. Claims 3, 5, 7, 10, 12, 13, 16, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toy et al.

Toy discloses the claimed invention except specific materials such as phenolic resin for the spacer and epoxy as an adhesive. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use phenolic resins and epoxy, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Toy discloses the claimed invention except the size of thermal interface being 4 mil in compressed condition and 6 mil being in normal condition. This size depends on the properties of chosen material and as it is stated above the selection of known materials is within the general skill of a worker in the art therefore obvious.

3. Claims 2, 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toy et al. in view of Boyer et al.

Toy discloses the claimed invention, as shown above, except the spacer being in cylindrical shape. Boyer discloses the spacer 32 of cylindrical shape placed between the heat sink and the substrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use cylindrical spacer as disclosed by Boyer et al. in the device disclosed by Toy et al. as to simplify the structure.

#### **(10) Response to Argument**

Appellant's primary argument that the element 20 is not a heat sink as claimed in the instant application is not persuasive since element 20 does function, at least in part, as a heat sink even without additional structure 50, 51 (Fig. 1). The Toy reference indicates that lid 20, when it extends further horizontally, operates as a thermal spreader (col. 8, lines 4-6). Appellants suggested a very narrow interpretation of term "heat spreader" as the device that distribute heat from the source more evenly. Such interpretation is not supported by the device structure as disclosed by Toy et al. because element 20 functions as a heat sink since it is not just distribute heat more evenly from a source, as implied by Appellant, but also dissipates heat to an environment or inherently functions as the heat sink. The structure illustrated on Fig. 5 shows element 20 with extended

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outer surface (col. 8, lines 4-6), and is modified in this embodiment for the particular reason as to dissipate heat.

The appellant's argument that element 20 is not in fact a heat sink and therefore the spacer member is not in contact between the heat sink and substrate is not persuasive in view of the arguments above.

For the above reasons, it is believed that the rejections should be sustained.

**(11) Related Proceeding(s) Appendix**

The related proceedings appendix in the Appeal Brief is missing, but the record is clear that there are no related proceedings listed in the related appeals and interferences section, therefore it is assumed that the appellant meant to include the appendix with a statement of "NONE".

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Respectfully submitted,

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**PRIMARY EXAMINER**

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